

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: Liesl Eichler Clark, Director

THROUGH: Aaron B. Keatley, Chief Deputy Director  
Amy Epkey, Senior Deputy Director

FROM: Jack Schinderle, Director  
Materials Management Division 

DATE: January 15, 2020

SUBJECT: Approval of Scrap Tire Market Development Grant Recommendations for  
Fiscal Year (FY) 2020

The Material Management Division (MMD), Solid Waste Section (SWS), Sustainable Materials Management Unit (SMMU), has completed the review of the applications received for the FY 2020 Scrap Tire Market Development Grant Program (Program) Funding under Part 169, Scrap Tires, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and is requesting approval to fund the recommended projects.

Thirty-one eligible market development and one law enforcement grant applications were received requesting \$11,133,724 in funding. Based on the remaining appropriated funds of \$2,222,649, we are recommending the funding of the one law enforcement grant project and six market development grant projects; these will utilize a total of \$2,104,486 from the Scrap Tire Regulatory Fund for FY 2020. The remainder of the unfunded projects (which total \$9,029,238) include \$3,625,000 from one application (Holcim – Alpena Lafarge) requesting funding for equipment and other requests for local road commission or municipal road paving projects. The remaining FY 2020 funding (approximately \$118,000) will be utilized for either additional market study analysis or a research study focused on performance evaluations of historic paving projects that have been funded through the Program.

Evaluation of the Grant applications was based on the three top priorities of the Market Development Program: the highest priority and points are awarded for equipment purchases; the next highest priority and points are awarded for research and development; and the lowest priority and points are awarded for paving projects. Each application was individually scored by two reviewers, and the projects were ranked in order by score. In addition, funding recommendations were made for each project. The spreadsheet for the individual scores, ineligible projects, unfunded projects, and recommended funding amounts is attached.

Continued development of scrap tire markets, other than tire derived fuel (TDF), is essential to the continuing success of the Scrap Tire Regulatory Program. It is anticipated that TDF use will continue to decline. This decline appears to be primarily due to reduced alternative energy costs, the costs of operation of small coal fired or co-generation plants, and federal clean air regulations. These recommended projects will promote and enhance existing markets, as well as help drive development of other emerging market segments.

The recommended projects are:

- **Detroit Police Department (DPD): \$52,760**

The DPD was the only Law Enforcement grant applicant for 2020 funding. In 2019, the DPD was granted \$232,000 to reduce the illegal dumping of scrap tires in the city of Detroit by providing for dedicated community police officers and educational materials. The effort to date has realized escalated enforcement within the city of Detroit, with multiple prosecutions, property seizures, and increased community awareness. The application this year is for equipment to further support the 2019 Law Enforcement grant. The DPD requested \$77,760 in the 2020 grant application. The amount was reduced by \$25,000 (the amount requested for the purchase of a panel van). Equipment to be purchased under the Grant includes overhead and license plate capture cameras, audio recording devices, night binoculars, GPS tracking devices, and other electronic surveillance equipment.

- **Packaging Corporation of America, Filer Mill (PCA): \$1,394,576**

PCA is installing a bubbling fluidized bed boiler (BFB), that will burn wood, wood waste, primary clarifier residuals, and paper recycling residuals. Tire derived fuel (TDF) will be supplemented to provide additional fuel heating value. Fuel delivery to the BFB will be done by installing solid fuel storage bins, extension of an existing idle conveyor, and addition of a new transfer screw to transport residuals from the screw presses to the new conveyor belt. A metering bin will be added for the TDF. The BFB is scheduled to be in operation by May of 2020, and once running, it will be capable of burning up to 24 tons per day of scrap tires (8.760 tons per year or 779,640 passenger tire equivalents [PTE]). The BFB has already received an Air Quality Permit (PTI No. 209-18), and PCA has begun installation.

- **Midland County Road Commission (MCRC): \$437,800**

The project is for construction of a "recycled" bridge on Alamondo Road over Little Salt Creek. The project is estimated to utilize 17,192 PTE as tire derived aggregate (TDA): 274 in rubber modified asphalt, and 1,182 in fiber-reinforced rubber concrete blocks. In addition to scrap tires, repurposed concrete beams, composted manure topsoil, straw wattle for erosion control, and crushed concrete for abutment fill and footings will be used. The proposed bridge design is less than half the cost of a conventional bridge at this location. The project will be a partnership with MCRC, Michigan Technological University (MTU), CM Rubber Technologies, and OHM Advisors. There is also potential for use of recycled glass and scrap tires as lightweight bridge decking material, as was demonstrated by a previous grant funded project.

- **Michigan State University: \$130,000**

The project will develop new methods to use scrap tire derived materials for wall and attic thermal insulation in new and existing building applications. The research team will: evaluate the index and thermal properties of scrap tires and mixtures of scrap tire derived materials; evaluate, through bench scale and full scale laboratory testing, the thermal performance and ease of installation in comparison to common insulation materials; conduct life cycle environmental impacts of the use of these materials; and engage with diverse stakeholders in the building industry to assess market interest and acceptance.

- **Porous Pave: \$55,750**

The grant application requests funding to develop a new mobile paving unit (MPU) that will increase productivity and reduce installation costs of Porous Pave materials, which includes scrap tire material, aggregate, and a binder. Porous Pave is typically used for walkways, sidewalks, golf cart paths, tree surrounds, and other suitable applications. Use of the MPU will triple daily capacity, which triple the scrap tire usage. Porous Pave utilized 2,446,700 pounds of Michigan's scrap tire rubber in 2018. Porous Pave also wishes to retain the exclusive rights to the distributorship for future MPU sales in the United States. Training for certified installers regarding proper use of the MPU will also be developed under this grant. Further discussion with the grantee prior to grant agreement execution, regarding their exclusive rights claim, will determine the possibility of grant repayment (if a suitable number of MPU distributors are identified).

- **Environmental Rubber Recycling (ERR): \$33,600**

Grant application for beneficial use of TDA as a lightweight, permeable alternative to traditional aggregate materials. The project will utilize TDA for fill in a 450-foot stretch of ditch/drain in rural Tuscola County. Construction utilizing TDA will lessen the ditch slopes from five feet to a two-foot maximum. Land near the ditch that was previously unusable will become suitable for expanded agricultural use. ERR is a registered producer in Michigan of TDF and TDA. The project will utilize 33,800 PTE. Water quality testing will be performed by EGLE to acquire additional data related to TDA projects.

- **Paving Research/Market Development Study: \$118,000**

There has been significant interest for details of evaluating performance of historical paving projects, as well as further market analysis, to determine trends in the scrap tire markets. The Program is proposing to either offer a Research Study RFP to curate details and information about historic projects and their performance, or to utilize funds for additional market study analysis and trending data.

Additional projects that the Program has interest in funding and could be considered, if additional funding were appropriated from the Scrap Tire Fund:

- **Holcim US Inc., Alpena Plant: \$3,625,000**

The Grantee requested funding in excess of the total annual grant appropriation of \$3.5 million. The project is for the installation of mid-kiln tire injection system equipment for Kilns 22 and 23 to burn TDF. Use of whole-tire TDF would partially replace thermal energy derived from fossil fuels and would completely consume the tires. The plant would utilize between 2.2 and 3.1 million PTE annually. The applicant states that they will reapply if the project is not funded in 2020. If funding became available, the Program would ask that they also consider a lesser funding amount or multi-year project, as well as utilizing shredded tires in their process, and potentially partnering with local units of government in northern Michigan to provide for ongoing scrap tire collections that would act as a low-cost fuel source.

- **Ingham County Road Commission: \$500,000**


The grant requested funding for the use of de-vulcanized rubber (DVR) in a chip seal program. There is interest from the review committee, including MDOT staff, as the use of chip seal is one of the most popular preventative maintenance techniques, and it would be

utilized on a significant amount of roadway in Ingham County. This project would encompass utilization of DVR single chip seal on 40 to 60 lane miles and DVR double chip seal on two to four total lane miles. The project partner for testing is Michigan State University.

- Dickinson County Road Commission: \$367,331  
The project proposes to utilize rubber-based pellet modified asphalt binder (RMA pellet). The RMA pellets will replace 25 percent of the virgin asphalt binder in the asphalt mixture. Interest from the review committee, including MDOT staff, was expressed due to the claim that the RMA pellets may be shipped in conventional trucks and stored in any weather conditions, eliminating the need for specialized heated tanks to ship and store liquid asphalt binder. This would allow more scrap tires to be utilized in paving projects. The project partner is MTU.
- City of Davison: \$216,879  
The application proposes to reconstruct approximately 600 feet of city streets with rubber modified concrete, utilizing approximately 25 percent ground tire aggregate. The project also includes a conventional concrete section for comparison purposes and the use of recycled concrete aggregate for base material. There was interest from the review committee (i.e., EGLE and MDOT), since rubber modified concrete is a new technology. The project partners are MTU and Rowe Engineering.

If you have any questions, please contact Mr. Jeff Spencer, Supervisor, SMMU, SWS, MMD, at 517-284-6879; SpencerJ3@Michigan.gov; or you may contact me at 517-284-6551.

Approved:

  
Amy Epkey, Senior Deputy Director

1/21/20  
Date

  
Aaron B. Keatley, Chief Deputy Director

1-22-20  
Date

  
Liesl Eichler Clark, Director

1/24/2020  
Date

#### Attachments

cc: Elizabeth M. Browne, EGLE  
Kathy Tetzlaff, EGLE  
Rhonda S. Oyer, EGLE  
Jeff Spencer, EGLE  
Kirsten Clemens, EGLE